

resin stopper, the last one, was applied just underneath this hole, and all the rest of the canal, some 24 cm., was left unoccupied. In the accompanying sketch only the section of the branch containing the woodpecker's holes has been represented.

We see here a case in which a Hymenoptera showed remarkable discernment by filling up an accidental opening in the stalk it had chosen as a home for its young, and which, if left open, would have proved fatal for the further development of its progeny. Moreover, the insect stopped its work in time to avoid a repetition of the same labour. Indeed, it is not easy to explain how the offspring—of moderate size as indicated by the length of the cells—could have made their way through a barricade twelve millimeters thick, like the one near the lowest orifice.

Must we now infer that the insect in question proved itself to be endowed with reason and intelligence? The problem has already been solved. Ferton* quotes a case in which an *Odynerus pasictum* L. covered with clay a lateral fissure several centimeters long. He mentions also two instances in which an *Osmia ferruginea* Latr. stopped up in the same way holes in a shell of a *Helix*. The *Osmia cornuta* Latr. in several cases repaired cracks in the walls of its nest. Of six specimens of *Heriades truncorum* observed by him, three filled up fissures with resin.

The above mentioned author infers from these facts that such actions are mere manifestations of instinct, and says in conclusion: "With Hymenoptera, acts of intelligence are exceptional; often those which seem such are nothing else than its manifestations of a habit but seldom remarked."

NEW COLEOPTERA.—VI.

BY H. C. FALL, PASADENA, CAL.

The preceding articles of this series have appeared at intervals from Aug., 1905, to Feb., 1912—under the caption "New Coleoptera, Chiefly From the Southwest." For the present one and any that may follow, the abbreviated title will be used, even though the majority of new species described may still come from the Southwest.

* Ferton: Sur l'instinct des Hyménoptères. Ann. Soc. Ent. Fr., 1901, pp. 142—144.

***Lathrobium shermani*, n. sp.**

Form moderate; reddish brown, shining, pubescent. Antennæ rather stout, scarcely reaching the bases of the prothorax, outer joints moniliform. Head as wide as long, a little wider behind, the angles broadly rounded, surface rather sparsely punctate. Eyes wanting, but in their place a small, nearly smooth, whitish spot of about the size of the second antennal joint; beneath sparsely punctate, the gular sutures rather widely separated, most approximate at about the middle of their length, where they are distant by about the width of the penultimate joint of the maxillary palpi. Neck one-half as wide as the prothorax, the latter oblong oval, narrower than the head, longer than wide, just perceptibly narrowed behind, the angles all rounded, the posterior ones a little more broadly so, surface, finely rather sparsely, confusedly punctate, with narrow, ill-defined, smoother median line. Elytra distinctly shorter than the prothorax, humeri small, sides divergent, the width at the apex equal to that of the prothorax, punctures without serial arrangement, coarser than those of the prothorax, mutually distant by their own diameters or a little more; wings undoubtedly vestigial or wanting. Abdomen gradually a little widened to the fifth segment, punctuation finer, not close. Legs concolorous; front thighs stout, broadly angulate subapically beneath; front tarsi broadly dilated, hind tarsi three-fifths as long as the tibiæ, basal joint short, terminal joint longer than the two preceding. Length 6.3 mm.; width 1.15 mm. North Carolina, Grandfather's Mt., 4,000–5,000 ft., September. (F. Sherman collector.)

The unique type is a male, having the sixth ventral segment broadly, rather deeply, arcuately emarginate, the segment bearing about the middle of its length on either side of the median line a short, transverse comb of closely placed, porrect, black spinules, about eight in number.

This species is remarkable in being the first blind—or virtually blind—Lathrobiid to be discovered in our fauna. In the European fauna the members of the subgenus *Glyptomerus* are similarly deprived of normal eyes, but the characters of *Glyptomerus*, as given by Casey in his Revision of the American *Pæderini* do not well fit our species. *L. shermani* is perhaps nearest to *Abletobium pallescens*

Casey, in which the eyes, though not lacking, are very small. The species is with pleasure dedicated to its discoverer.

***Tribalister striatellus*, n. sp.**

Rotundate oval, castaneous, moderately shining; above minutely, sparsely, evenly punctulate; elytra 6-striate, the four outer ones subentire, the two inner abbreviated at base; sutural stria punctate, the others scarcely so except near the apex; margin of elytra acute and continuous with that of the prothorax; discal striae entirely without cariniform outer margins. Propygidium coarsely, densely punctate, smoother narrowly along the base; pygidium more finely, sparsely punctate, with intermixed still finer punctures, the latter alone present at apex. Sides of body beneath very coarsely, densely punctate. Otherwise in nearly all respects as in *T. marginellus*. Length 2 mm.; width 1.5 mm.

Rhode Island, Berkley; a single example taken by the writer many years ago under a stone in early spring. It was then identified as probably *T. marginellus*, by Mr. Frederick Blanchard, but a recent comparison with the type of the latter inclines me to the belief that it is specifically distinct. In *marginellus* the upper surface is virtually impunctate except for the coarse punctures along the elytral apex (which are also present in *striatellus*); the so-called elytral striae, after the second, which is very finely impressed, are really not striae at all, but costae, the striae being completely obsolete and traceable only by the slightly different surface lustre along the inner side of the costae; the sutural stria is impunctate, the pygidium is less finely punctate, and the sides of the body beneath are less coarsely and densely so. The region between the hind coxae, involving the apical portion of the metasternum and the basal part of the first ventral segment is broadly depressed—not at all so in *striatellus*. The frontal stria is interrupted medially in *marginellus*, finely impressed and entire in *striatellus*. *Marginellus* was described in 1859, the type being from Maryland, and very few examples have since been taken. *Striatellus* also appears to be excessively rare, and I am not aware that a duplicate exists in collections.

HETÆRIUS.

***Hetærius zelus*, n. sp.**

Oblong, feebly convex above, rufo-ferruginous with fulvous pubescence. Head shining, vertex concave, sparsely punctate,

front and clypeus subimpunctate. Prothorax two-fifths wider than long, disk between the broad impunctate grooves much longer than wide, feebly convex, uniformly rather finely, not closely punctate, each puncture bearing a short, coarse hair; lateral area divided by a deep, transverse sulcus at basal third, the posterior portion globosely convex, rufo-piceous, glabrous, polished, with fringe of hairs along its outer margin; anterior portion slightly narrower than the posterior, of the usual flattened or slightly concave form, sides nearly parallel behind the oblique, apical truncature, surface rather coarsely, closely punctate and pubescent, the hairs becoming denser, longer and recurved along the posterior margin. Elytra slightly wider than the prothorax, one-fifth wider than long, sides feebly arcuate and just visibly converging posteriorly; subhumeral stria two-thirds the length of the elytra, first dorsal nearly attaining the apex, second dorsal three-fourths, and third dorsal two-thirds the length of the elytra, all the striae externally finely cariniform, punctuation fairly close, nearly uniform throughout, hairs short and plumose basally, becoming longer and simple apically where they are intermixed with still longer, sparse, recurved hairs which occur also along the lateral margins. Propygidium and pygidium sparsely uniformly punctured and setose, the pygidium becoming smooth at apex. Prosternum nearly flat at summit, striae sinuate between the coxae, arcuately convergent but not meeting at apical third, interstitial surface nearly smooth posteriorly, becoming closely punctate in front, densely so at apex; sides of prothorax beneath impunctate, numerous punctate in front of the coxae, meso- and metasternum smooth. Legs moderately long, the femora and tibiae sparsely, finely punctate, the latter flattened and expanded as in the allied species. Length (type) 2.25 mm.; width 1.5 mm.; the size practically constant in all examples seen.

Taken at Pasadena, California, October to March, under stones with *Formica pilicornis*. This species is similar to *tristriatus* in a general way, but with elytral striae nearly as in *morsus*, judging from the description of the latter. It is virtually of the same size as *tristriatus*, possibly slightly smaller, and evidently narrower. The cariniform margins of the first and third dorsal striae, which in *tristriatus* are densely squamose throughout their lengths are here not appreciably more densely clothed except near the base of the third stria.

Hetærius strenuus, n. sp.

This name is proposed for a form similar in all general features to *tristriatus* but larger and more densely punctate throughout. In *tristriatus* the head, presternum posteriorly, legs and pygidium are sparsely, finely punctate. In *strenuus* these parts are all rather densely, more strongly punctate. Length 3 mm.; width 2 mm. In *tristriatus* the length is 2.5 mm.

The type bears label—Santa Cruz Mts., California, April 17, 1900. It occurs with a black *Formica* with dark, rufo-piceous legs. A second precisely similar specimen has been taken at Pasadena by Mr. J. O. Martin—March 31, 1916—in whose collection it now is. It, together with one or more examples of *H. californicus* were found under the same stone in nest of what I believe to be *Formica pilicornis*.

H. loripes Csy. The description recently published agrees so perfectly in all respects except the punctuation of the head with *tristriatus*, that it is difficult to believe it can be really distinct from the latter, more especially since it comes from the region inhabited by *tristriatus*.

H. exiguus Mann. I have a specimen of this species collected by Dr. Fenyès, at Porvenir, New Mexico. As Mann's specimens were all taken at Pullman, Washington, I had supposed my New Mexico specimen to be something new until I made careful comparison with a paratype of *exiguus* kindly given me by Mr. Mann.

H. minimus Fall. This little species—described from Colorado—also occurs in New Mexico. It has been taken at "Lower Pecos" by Dr. Fenyès.

SAPRINUS.

Saprinus carinifer, n. sp.

Broadly oval, black, legs dark rufous, upper surface minutely alutaceous and dull throughout. Head finely rugulose. Prothorax twice as wide as long, sides strongly convergent and nearly straight to apical third; surface very sparsely, minutely, nearly evenly punctate, the sides longitudinally rugulose in about the lateral fourth, side margins fimbriate with very short hairs. Elytra across the humeri one-fifth wider than the sutural length, punctuation baso-medially similar to that of the prothorax, the punctures becoming only slightly larger and closer toward the sides, but

evidently though gradually so toward the apex, where they are separated by about their own diameters; dorsal striae obsolete, represented by fine carinae, the sutural attaining the apex but becoming obsolete near the base; fourth dorsal reaching the apical third, joining the obsolete sutural at base; third to first dorsals increasing in length, the last named entire; oblique humeral obsolete, internal subhumeral extending from base to apex, cariniform throughout; external subhumeral short, impressed. Propygidium and pygidium more coarsely and closely, nearly uniformly punctured. Body beneath coarsely, closely punctate at sides, minutely and sparsely so at middle. Prosternum very feebly convex at middle, the striae horizontal, diverging a little before and behind the coxae, broadly arcuately uniting behind the prosternal apex; interstrial area with a few minute punctures. Anterior tibiae quadridentate. Length 3.5 mm.; width 2.8 mm.

California. Described from a single example taken by Mr. G. H. Field in the mountains on the western border of the Colorado Desert. This is one of the finest and most distinct species in our fauna. The posterior tibiae are scarcely as wide as the middle ones, but are hardly narrowed apically. This fact, together with the nearly flat prosternum, indicates a position between Horn's first and second groups; it may, however, with about equal propriety be included in Horn's group IV. The rugulosity at the sides of the thorax is not due to the increase in size or longitudinal confluence of the punctures; the latter are scattered over and between the rugulosities and remain about as minute and sparse as at the middle of the disk.

Saprinus ciliatoides, n. sp.

Closely related to, and very like *ciliatus*, but on comparison with type of the latter seems distinct by its larger size and generally sparser, more minute punctuation. In the type the elytra are as Horn describes them, "densely aciculate punctate at sides and apex," the punctures well separated only in the baso-sutural region and narrowly along the suture posteriorly. The punctures are in general elongate, a tendency that is evident even where they are sparsest. In the present species the punctures are everywhere nearly round, very sparse and fine on the disk, and even where closest, as at the sides and apex, they are rarely much closer together than

their own diameters. The form, colour, striae, prosternum, etc., are virtually as in *ciliatus*. Length 3.2 mm.; width 2.5 mm. (Length of *ciliatus* 2.5 mm.)

Nevada, Las Vegas. One specimen. I have seen another, apparently the same, placed with the type of *ciliatus* in the Le Conte collection; it was taken by Crotch near San Bernardino, California.

***Saprinus martini*, n. sp.**

Moderately robust, brownish piceous with faint æneous lustre, integuments polished. Head densely punctate. Prothorax ciliate at sides, densely punctate in front and at sides, becoming rapidly but not abruptly smooth in the baso-medial region; the posterior margin punctate. Elytra moderately, strongly and closely punctate throughout, except between the sutural and fourth dorsal striae, the smooth area rather well defined but not sharply limited behind, the punctures extending further forward within the fourth stria than along the suture. First and second dorsal striae attaining the apical third, third and fourth dorsals sub-equal and shorter, sutural entire and joining the fourth dorsal; internal subhumeral oblique, continuous with the humeral, parallel with and as long as the first dorsal; external subhumeral short, distinct from the marginal. Propygidium and pygidium densely but not confluent punctate, the punctures becoming finer at the apex of the latter. Prosternum rather strongly convex but not compressed, the striae divergent and terminating in foveae, which are more remote than usual from the prosternal apex. Margin of front tibiae about 6-denticulate, each denticle bearing a stout spinule. Length 2.4-3 mm.; width 1.8-2.2 mm.

California. Described from two examples taken by Mr. J. O. Martin in Palm Canyon, on the western border of the Colorado Desert. This species is of the same form and general appearance as the common *fimbriatus*; this latter, however, having the prosternum compressed, belongs to a different group. *Martini*, by its prosternal character, belongs to Horn's group VI, and by the ciliated margins of the prothorax is nearest *ciliatus*. In the latter the punctuation of the elytra is more aciculate, the second dorsal stria shorter than the third, and the prosternal foveae are less distant from the apex.

***Bactridium californicum*, n. sp.**

Similar in general appearance to *striolatum*, to which it is

most nearly allied by the characters used in Horn's table.* Form a little less robust than in *striolatum*; colour reddish brown, the elytra more rufous, with a small, diffuse, darker scutellar spot and the apical third, piceous; antennæ and legs rufotestaceous; surface distinctly reticulato-alutaceous, feebly shining. Head and prothorax coarsely not closely punctate. Head a little narrower than the prothorax, the latter quadrate with obtuse angles; sides straight, just perceptibly convergent posteriorly, margin feebly crenulato-denticulate, disk flattened medially. Elytra a little wider than the prothorax, finely striate, the striæ distinctly, rather closely punctate. Pygidium and last ventral segment very coarsely, closely punctate; segments 2-4 each with a single transverse series of coarse, elongate, closely placed punctures; coxal lines of first ventral distinct, nearly or quite attaining the posterior margin of the segment. In the male the last ventral segment is shorter than the three preceding united, the tip truncate. In the female the last segment is fully as long as the preceding, oval at tip. Length 2-2.3 mm.; width .55-.65 mm.

Southern California, Ojai Valley, March, under bark of dead sycamore. A good series of this species taken by the writer has stood in his collection for more than twenty years without a name. As compared with *striolatum* it is a little less robust with differently coloured elytra, more distinctly alutaceous integuments, less irregularly punctured prothorax, and elytral striæ almost completely attaining the apex. In the single example of *striolatum* before me the elytral striæ are more abbreviated, with numerous irregularly placed punctures at apex. As compared with *striatum*, the only other species of this genus that enters California, the present species is a little larger and stouter, with better defined elytral striæ and much more coarsely punctured under surface.

Sphindocis, new genus.

Closely allied to *Orthocis* in its elongate parallel, slightly depressed form, subglabrous surface, posteriorly margined elytral suture, and simple apex of the anterior tibiæ. The maxillary palpi are stout, the last joint widely truncate, instead of pointed as in *Orthocis*, antennæ 11-jointed, the basal joint stout, oval, 2nd similar but smaller; 3rd as long as the 2nd but more slender, about twice as long as wide; 4th to 8th gradually shorter, the 8th

*Trans. Am. Ent. Soc. XII, 1879, p. 265.

slightly transverse; 9th to 11th forming a loose club. Head and clypeus simple in the male, in which sex there is a small setigerous fovea near the base of the first ventral segment.

***Sphindocis denticollis*, n. sp.**

Rufotestaceous, strongly shining, prothorax and elytra coarsely, closely, uniformly punctate; head similarly but not quite so coarsely so. Prothorax one-third wider than long, sides parallel and broadly arcuate, margins narrowly, abruptly reflexed and quadridentulate. Elytra scarcely wider than the prothorax, slightly more than twice as long as wide, sides parallel to apical two-fifths, apex evenly rounded. Beneath coarsely, closely punctate anteriorly, abdomen except the basal segment finely and sparsely so. Length 3.75 mm.; width 1.25 mm.

California (Alameda Co.). A single male. If we exclude the Rhipidandrinae this is the largest Cicide known to me. In its size and denticulate thorax it somewhat suggests *Odontosphindus*. The surface, as in *Orthocis*, is not perfectly glabrous, each puncture bearing a very minute hair.

SEASONAL IRREGULARITIES IN THE
OCCURRENCE OF DRAGONFLIES.

BY E. M. WALKER, TORONTO.

The exact composition of the dragonfly fauna of a given locality is subject to frequent change. The effects of erosion on the beds of streams, the deposition of sediment and the accumulation of organic debris in lakes and ponds are constantly producing gradual changes of environment which react on the Odonate fauna, as on other groups of aquatic life, resulting in time in the disappearance of many of the original resident species and the invasion of new forms better adapted to the altered conditions. The drying up of water-courses, due to the clearing of the forests, the pollution of streams and the filling of ponds and swamps are also causing the disappearance of many species from the affected localities, while other species previously unknown in the district find suitable breeding-places in newly created bodies of water, such as result from damming streams, the construction of canals, drainage ditches through swamps and along railways, gravel pits and other excavations, etc.

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